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Ballistic Missile Defense and National Defense Strategy
Striking a balance between defense, cost, and risk

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ABSTRACT

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Spending multi-billions of dollars to develop and deploy a national Ballistic Missile Defense (BMD) system with a limited capability against an accidental or rogue actor launch does not satisfy the defense policy goals or the strategic framework as defined in either the 2001 Quadrennial Defense Review (QDR) or the recently published 2002 National Security Strategy for the United States. At best, this limited national system provides a marginal defense that is easily defeated by rudimentary and readily available countermeasures. But even worst, it is incapable of defeating the most likely Weapon of Mass Destruction (WMD) and ballistic missile threats – non-missile delivery means of WMD against the U.S. and a short to medium range missile attack against our deployed forces or our allies. This is not the capabilities-based defensive strategy that defeats how will verses how might the enemy fight. Its does not mitigate the risk associated with balancing present and future defense requirements like recapitalization, modernization, transformation, and homeland security. Nor does it fulfill our defense policy goals of assuring allies and friends, dissuading future military competition, deterring threats or decisively defeating our adversary should deterrence fail. The nation cannot allow the tragedy of 11 September 2001 to unduly influence our BMD effort and deploy a national system that creates a false sense of security. Even the affluent United States as the current world hegemon cannot afford everything. Tough times require equally tough and smart decisions. The purpose of this paper is to assess recent decisions and using the 2001 QDR defense policy goals and strategic framework to propose how the military might best employ BMD systems in defense of the United States, its deployed forces and its allies without creating unnecessary risk elsewhere.

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PREFACE

The Army recruits soldiers and retains families. As I complete my twentieth year of military service and fourteenth year of marriage, I am indebted to the patience and understanding of my loving wife and three children. They serve as a constant reminder to why I, and many other dedicated soldiers, serve this great Nation. For their and our citizens' sake, may we all be successful in keeping the Nation strong and free.

BALLISTIC MISSILE DEFENSE AND NATIONAL DEFENSE STRATEGY – STRIKING A BALANCE BETWEEN DEFENSE, COST, AND RISK

> This is still a dangerous world, a less certain, a less predictable one…Today's most urgent threat stems not from thousands of ballistic missiles in Soviet hands, but from a small number of missiles in the hands of states for whom terror and blackmail are a way of life. They seek weapons of mass destruction to intimidate their neighbors, and to keep the United States and other nations from helping allies and friends in strategic parts of the world…To maintain peace, to protect our own citizens and our allies and friends, we must seek security based on more than the grim premise that we can destroy those who seek to destroy us. We need a new framework that allows us to build missile defenses to counter the different threats of today's world. Our nation will assign the best people to this critical task.
>
> —President George W. Bush
> National Defense University, 1 May 2001

> Missile defense has to be weighed carefully against all other spending and all other military priorities. If we spend billions on [National] missile defense, we will have diverted all that money to address the least likely threat while the real threats come into this country in the hold of a ship, or the belly of a plane or are smuggled into a city in the middle of the night in a vial in a backpack. In truth, our real security needs are much more earthbound and far less costly than [National] missile defense.
>
> —Senator Joseph Biden
> National Press Club, 10 September 2001

> Make no mistake: keeping America safe in such a world is a challenge that's well within our reach, provided we work now and we work together to shape budgets, programs, strategies and force structure to meet threats we face and those that are emerging…but, we need to get about the business of making these changes now in order to remain strong, not just in this decade, but in decades to come.
>
> —Deputy Secretary of Defense Paul Wolfowitz
> Statement before House Select Committee
> on Homeland Security, 11 July 2002

The 11 September 2001 (9/11) terrorist attack on our Nation was a sheer tragedy in the amount of damage and loss of innocent life that occurred. That attack challenged one of our Nation's most fundamental interests – the defense of our homeland. Consequently, it strongly influenced our strategic direction and planning principles that resulted in placing greater emphasis on homeland defense, preparing for asymmetric threats, championing new methods of deterrence and developing military weapons to counter emerging threat capabilities while managing the risk associated with not knowing who, how or when the next attack may occur.

Ballistic missiles are one of these proliferating threat capabilities against which the United States has no current national defense capability.

The 2001 Quadrennial Defense Review (QDR) has identified and the President has publicly stated that Ballistic Missile Defense (BMD) of the United States, its deployed forces and its allies are a top priority. Accordingly, the Secretary of Defense immediately reorganized his missile defense development organization and gave them unprecedented acquisition authority. Meanwhile Congress provided the newly restructured Missile Defense Agency with $7.8 billion dollars in 2002, a 59% increase over the previous year, and $46.2 billion more in the Future Year Defense Program (FYDP) to quickly develop the military weapons needed to counter this threat. Procurement, fielding and operating costs will add billions of dollars to the total BMD cost.

But, are these efforts producing a military capability that truly counters the perceived/estimated threat or is it one created from the quagmire of crisis management and a compelling desire to simply do something? Even the affluent United States as the current world hegemon cannot afford everything or ignore the international repercussions of its actions. Tough times require equally tough and smart decisions. The purpose of this paper is to assess recent decisions and using the 2001 QDR defense policy goals and strategic framework to propose how the military might best employ ballistic missile defense systems (BMDS) in defense of the United States, its deployed forces and its allies without creating unnecessary risk elsewhere.

BRIEF HISTORY OF BALLISTIC MISSILE DEFENSE

History paves the pathway into the future. To better understand the future, one should always know a little bit about its past. So, how did the United States get to where it is today? It is a convoluted story of evolution in technology, threat, and threat assessments with budgetary and political constraints.

Since the introduction of the German V2 rocket during the latter part of World War II (WWII), nations have pursued BMD in order to fulfill their basic obligation of defending their citizens, infrastructure, and military forces. The post WWII development of nuclear weapons and accurate long-range ballistic missile delivery systems by the U.S. and U.S.S.R. characterized the cold war with a nuclear strategy of Mutually Assured Destruction (MAD), a global ballistic missile threat, and the urgent need for a reliable BMD capability.

During the 1950 to 1970 timeframe, the analog computer and transistor technologies allowed the two superpowers to exploit air defense weapons and develop a rudimentary Anti-

Ballistic Missile (ABM) defense capability that threatened the MAD strategy. To ensure the effectiveness of their large and costly nuclear arsenals, the U.S. and U.S.S.R. established a 1972 treaty that limited their ABM defense to a single site with 100 interceptors as well as prohibiting the development of ABM technologies for use on air, sea, or space platforms.[1] The U.S. deployed its treaty compliant ABM system just three years later. On 1 October 1975, the Safeguard ABM system achieved an operational capability in defense of U.S. Intercontinental Ballistic Missiles (ICBMs) at Grand Forks, North Dakota. Ironically, within 24 hours Congress terminated funding and directed closure due to its inability to defeat an ICBM multiple independent reentry vehicle (MIRV) warhead and unexpectedly high operating costs. Unfortunately, technological obsolescence and high cost will continue to plague the development and deployment of BMD systems.

During the 1980s, all U.S. BMD efforts were consolidated and given to the newly created Strategic Defense Initiative Organization (SDIO). Its charter was the technological pursuit of "defending the U.S. against a massive U.S.S.R. nuclear missile attack"[2] and derived from President Reagan's appeal "to give us the means of rendering these [Soviet] nuclear weapons impotent and obsolete."[3] The SDIO's decade long research and development effort produced several key concepts that evolved into our present day BMD effort. First, a layered architecture of space-based and ground-based sensors that are integrated by a complex and highly automated battle management system. Second, the advantage of multiple engagement opportunities achieved by attacking the target during the ascent or boost, mid-course and descent or terminal phases of ballistic flight. Third, the need for kinetic energy weapons to hit and kill the warhead, especially those employing Weapons of Mass Destruction (WMD) sub-munitions. Fourth, the potential for rapid firing directed energy weapons to render costly missile interceptors obsolete. Although an insightful and unconstrained vision, it required the exploration and development of high cost and risky technologies that were difficult to justify during Congressional budget hearings. It also directly competed against other cold war costs and social assistance programs. Although a presidential priority, BMD was not robustly funded and work progressed at a very slow rate.

During the 1990s, the U.S. BMD effort underwent significant change. First, the end of the cold war and the subsequent disintegration of the U.S.S.R. greatly diminished the threat of a large-scale nuclear strike and allowed the U.S. to correspondingly decrease their national BMD objective. Reorienting from a massive to a limited (10 or less) nuclear attack defense capability simplified the architectural concept and helped to address technological feasibility and affordability questions. Second, the use of Short Range Ballistic Missiles (SRBMs) during the

1991 Persian Gulf War established an urgent need for the Tactical Missile Defense (TMD) of deployed forces and allies within a theater of operations. Third, the use of advanced and hybrid SRBMs as terror weapons by China against Taiwan in 1996 and Korea against Japan in 1998 created a new threat assessment. In addition to the tactical use of SRBMs, the U.S. saw the proliferation and evolution of ballistic missile technology as enabling a regional state or rogue actor to potentially obtain a long range strategic strike capability. The North Korean Taepo Dong and Iranian Shahab 3 missiles are probably the most well known examples of nations exploiting their tactical missile technology and infrastructure in order to develop a long range missile capability for operational (regional) or strategic purposes. Fourth, a series of Congressional legislation, the Missile Defense Acts of 1991, 1993 and 1999, redefined our BMD priorities to deploy TMD systems first and a limited and affordable national system as soon as technically feasible. These acts also resulted in the reorganization of SDIO. The Ballistic Missile Defense Organization (BMDO) was created and chartered with fielding TMD systems, the continued development of a limited national BMD system with a short notice or emergency deployment capability and development of advanced technology to counter emerging threats.[4] Under this charter, BMDO conducted research and development of a potential national BMD system capability to be fielded in the 2003 timeframe and actively pursued the following TMD systems:

- Fielding 4 improvements to the endo-atmospheric or lower tier U.S. Army Patriot
- Initial development with Germany and Italy of the lower tier U.S. Army Medium Extended Air Defense System (MEADS) which is the successor to Patriot
- Initial development of the lower tier U.S. Navy Area Defense (NAD)
- Final development of the exo-atmospheric or upper tier U.S. Army Theater High Altitude Area Defense (THAAD)
- Initial development of the upper tier U.S. Navy Theater Wide (NTW)
- Initial development of the lower tier U.S. Air Force Airborne Laser (ABL) that exploits air mobility to obtain both a boost and terminal phase engagement opportunity

The current decade continues the momentum of great change. After a series of failed intercept tests, a presidential decision on 1 September 2000 was made to defer deployment, but to continue the development of the limited national BMD system. Then, the tragic 9/11 terrorist attacks brought new emphasis to the U.S. BMD effort. For the first time our 2001 QDR strategy (and the 2002 National Security Strategy) established the BMD, including WMD from rogue nations or actors, of the U.S., its deployed forces and its allies as a top defense priority. To

achieve this objective, the Secretary of Defense reorganized the BMDO and gave them unprecedented authorities in order to streamline and improve the military acquisition process. Meanwhile, Congress fully funded the new Missile Defense Agency (MDA) with $7.8 billion dollars in 2002, a 59% increase over the previous year and $46.2 billion more in the FYDP to quickly develop both national and theater BMD capabilities. Finally, the U.S. formally withdrew from a long standing and successful, but constraining BMD treaty with Russia.

With the demise of the 1972 ABM Treaty, MDA is pursuing advanced BMD technologies, exploring air-, sea-, and space-based platforms, and building infrastructure at Fort Greely, Alaska in preparation for the continued development and deployment of an initial national BMD capability as soon as possible. For TMD capabilities, approximately one-third of the U.S. Army Patriot forces have received the latest technology upgrade, Patriot Advanced Capability 3 (PAC-3), while THAAD and ABL undergo final preparations for fielding in 2007. For a sea-based TMD capability, the U.S. Navy's NTW continues development for a 2010 introduction into the fleet. With our German and Italian partners, MEADS has entered a "proof of engineering principle" developmental phase and remains postured for its projected fielding date of 2012. Unfortunately, one program was not succeeding. Using their new acquisition authority, MDA cancelled the poorly performing and cost plagued U.S. Navy NAD system in order to shift funding and efforts towards more promising BMD programs. Clearly, the MDA understands their new charter and is hard at work to fulfill it.

So, where are we at the end of 2002? Having spent more than $50 billion dollars over the last 15 years[5] and spending another $7.8 billion dollars in the current budget, the U.S. is pursuing a BMD capability that employs a layered and integrated architecture to "intercept missiles in *all phases of their flight* (i.e. boost, midcourse and terminal) against *all ranges of threats*" [emphasis added].[6] Although program categories have changed with national BMDS now under the midcourse category and theater BMDS under both the boost and terminal categories, their purpose has not. Basically, the U.S. wants the best BMD capability as quickly and affordable as possible. A "good, fast, and cheap" strategy is seldom balanced and rarely leads to success. Although air, sea, and space platforms and other advanced BMD technologies are back into the viable scope of technological pursuits, their associated risk and high costs may quickly diminish the current Congressional enthusiasm to fund them. The debate may already be developing and championed by Senator Carl Levin, Chairman of the Senate Armed Services Committee, as he voiced his concern that:

> …we may not be putting enough emphasis on countering the most likely threats to our national security and to the security of our forces deployed around the world, those asymmetric threats, like terrorist attacks on the USS Cole, on our barracks and our embassies around the world, on the World Trade Center, including possible attacks with weapons of mass destruction and cyber-threats to our national security establishment and even to our economic infrastructure.[7]

Nevertheless, this BMDS approach is an aggressive and technologically challenging objective that will truly require the "assignment of the best and brightest people"[8] in order to field effective weapons systems without succumbing to an acknowledged history of technology obsolescence and excessive cost overruns. This is an exciting as well as a challenging time for BMD.

THE EMERGING BMD ENVIRONMENT

The environment in which the U.S. will develop and deploy BMD weapons has also undergone significant change. Post 9/11 concerns of deterring and defeating an accidental or rogue actor's use of ballistic missiles, including WMD warheads, has created new energy and a corresponding sense of urgency. This desire is reflected in the Department of Defense (DoD) QDR report published on 30 September 2001 that established the BMD of the U.S., its deployed forces and its allies as a top priority. Exigency is also the impetuous for the Secretary of Defense's reorganization of the missile defense organization that elevated it to agency level status and empowered it with unprecedented acquisition authority. Meanwhile, for the first time, Congress has fully funded the MDA in the current and FYDP budgets. This is a generous and exciting, yet challenging time for BMD. However robust and supportive the environment, the MDA must ensure that its efforts still comply with the current U.S. policy, defense goals, and defense strategies. The inherent responsibility for establishing a defensive capability is not unconstrained and remains accountable to the same people that it seeks to protect.

U.S. BMD POLICY

The U.S. has recently changed and broadened its National Security Policy on BMD. In the aftermath of 9/11 and attempting to address a compelling desire to ensure the defense of the Nation against all enemies, a recent policy review removed barriers thought to be necessary and sufficient for establishing a credible/effective BMD.

Since establishment of the 1972 ABM Treaty with Russia, the U.S. relied heavily on diplomacy to achieve the three National Security Strategy (NSS) principles of responding to threats and crises, protecting the homeland and countering attacks using WMD. The recently published 2002 NSS collectively redefines these principles, inclusive of ballistic missiles, as

preventing our enemies from threatening us, our allies and our friends with WMD. Regardless of the underlying security principle or its definition, the treaty's overall purpose was to limit each nation's ABM defense capability and thereby preserve the balance of power through a strategy of mutually assessed destruction. Specifically, this treaty restricted each nation to the deployment of two limited ABM sites with one protecting the national capital and the other protecting an ICBM launch area. Each limited BMD site was restricted in both radar detection and launch capabilities as well as physical location so that collectively, these two sites could neither provide a nationwide BMD defense capability nor become the basis for developing one. The base treaty was amended on 3 July 1974 to further limit each nation to only one ABM site. More importantly, the treaty established exacting criteria on future improvements to their ABM site and the pursuit of advanced BMD technologies. The U.S. and U.S.S.R. agreed:

> to limit qualitative improvement of their ABM technology, e.g., not to develop, test, or deploy ABM launchers capable of launching more than one interceptor missile at a time or modify existing launchers to give them this capability, and systems for rapid reload of launchers are similarly barred. These provisions also ban interceptor missiles with more than one independently guided warhead. Further, to decrease the pressures of technological change and its unsettling impact on the strategic balance, both sides agree to *prohibit development, testing, or deployment of sea-based, air-based, or space-based ABM systems and their components*, [emphasis added] along with mobile land-based ABM systems. Should future technology bring forth new ABM systems "based on other physical principles" than those employed in current systems, it was agreed that limiting such systems would be discussed, in accordance with the Treaty's provisions for consultation and amendment.[9]

The very restrictive nature of this agreement set the conditions for a mutual belief in the offensive capability of the strategic ballistic missile forces and is widely credited with preserving peace throughout the cold war. However, that same restrictive nature also constrains the research, development, and testing of both advanced BMD technologies and other than ground-based platforms required to deploy anything but a rudimentary and marginally effective system. After several months of unsuccessful renegotiation attempts and in the aftermath of the 9/11 attack, the U.S. withdrew from the ABM Treaty on 13 June 2002 and started actively pursuing the unconstrained development and deployment of BMDS. By terminating verses amending this historic treaty, the U.S. deliberately chose a new and more aggressive policy to defend the Nation, its forces and its allies against a ballistic missile threat that includes the potential use of WMD by rogue or terrorist actors.

However, the U.S. withdrawal from the ABM Treaty was a proverbial shot heard around the world and the initial international opinion was not very favorable. The international community and many arms control advocates viewed this treaty as the cornerstone of other

containment treaties on ballistic missile capabilities, e.g. the 1970 Non-Proliferation Treaty (NPT), the 1987 Missile Technology Control Regime (MTCR) and the 1996 Comprehensive Test Ban Treaty (CTBT). From their foxhole, the ABM Treaty preserved the integrity of the global containment effort and could have been amended instead of terminated.[10] Others have voiced a much stronger feeling. For example, Russia perceives the U.S. BMD effort as a compelling "need to do something" in order to increase national security and to fuel a sagging economy.[11] Russian President Vladimir Putin labeled the U.S. decision to abandon the treaty as a bad mistake and called for both countries to move quickly to create a "new framework of our strategic relationship".[12] Meanwhile, Chinese President Jiang Zemin voiced strong opposition, a fear of a new round of the arms race and a desire for multilateral efforts to ensure global stability.[13] Interestingly, where some nations see despair and concern, another sees an opportunity. Although condemning their label as a rogue nation, North Korea may use this position to leverage international aid and lifting of U.S. economic sanctions against a failing economy in exchange for their continued moratorium on ballistic missile testing.[14] Only time and a lot of prudent intelligence work will truly tell how the international community judges U.S. actions and how they will react. However, the outlook is dubious with international experts predicting an escalation of ballistic missiles and WMD especially in the Asian-Pacific region.[15] Senate Majority Leader Tom Daschle accurately summarized the U.S. dilemma when he said:

> We don't know what effect this [U.S. withdrawal from the ABM Treaty] will have yet. We do know that it poses some serious questions regarding our relationship with our allies, with Russia and China, that [sic] we're going to have to consider very, very carefully.[16]

Even the U.S. as the current world hegemon cannot ignore and must eventually address the international repercussions of this action and other casual effects that will surely arise during its pursuit of BMD capabilities.

In pursuit of this policy, the U.S. has employed strong methods and extensive resources. First, the President continues to strongly advocate BMD as a top defense priority and announced his intent to fulfill the 1999 National Missile Defense Act that requires a defense capability as soon as possible.[17] The 2002 United States Military Academy Graduation Exercise was only one of several forums used to advocate a strong defense. In his graduation speech, President Bush said:

> The gravest danger to freedom lies at the crossroads of radicalism and technology. When the spread of chemical and biological and nuclear weapons, along with ballistic missile technology – when that occurs, even weak states and small groups could attain a catastrophic power to strike great nations. Our enemies have declared this very intention, and have been caught seeking these

> terrible weapons. They want the capability to blackmail us, or to harm us, or to harm our friends – and *we will oppose them with all our power* [emphasis added].[18]

A listener could almost envision a scene similar to Nikita Krushchev frantically pounding the podium with his shoe in order to emphasize his unfulfilled proclamation to economically bury the West during his September 1960 United Nations General Assembly address. President Bush's resolve and appeal to the Nation, Congress and our allies evokes a strong commitment and attempts to capture a technological feat much like JFK's historic challenge to place a man on the moon by the end of the decade or former President Reagan's "Star Wars" initiative that some attribute to ultimately ending the cold war. His conviction was captured by many and reported in *The New York Times* as being "an obsession worthy of literature".[19] To start building international commitment, the President dispatched the Deputies of the State Department, Defense Department and National Security staff to Europe, Asia, Australia, and Canada for discussions and consultations. This concerted effort to address international concerns and potential adverse reactions, e.g. an increased or proliferated nuclear or ballistic missile threat, to our treaty withdrawal will surely continue as part of the U.S. diplomatic strategy.

Following in kind are the Secretary of Defense's efforts to restructure the BMD organization and charter them with appropriately focused priorities, directing the reassignment of our "best and brightest" to staff it and streamlining an arduous acquisition development process.[20] The final and most critical resource was provided in the 2002 National Defense Act. Congress has robustly funded BMD at a time in our history where many major demands, like homeland defense and military transformation, are being placed on a finite amount of resources. Simply put, a lot of effort and resources are being expended on developing and deploying a BMD.

Despite international concerns and admiration for a long-standing and successful containment agreement, the U.S. withdrawal from the 1972 ABM Treaty and its subsequent actions signal a strong commitment that makes revocation or drastic alteration of the policy virtually impossible. Therefore, it is not a question of doing or not doing it. The question is how to best accomplish it. It is a matter of exploring viable and affordable alternatives or options to implement this policy while remaining compliant with defense policy goals and strategy as well as the non-provocative spirit of the former ABM Treaty.

U.S. DEFENSE STRATEGY - POLICY GOALS AND STRATEGIC TENETS

Any weapon system must provide a capability that enables the military to achieve specific goals, objectives and policies. In the field Army, this linkage is easily understood and achieved

by nesting tactical objectives to operational campaign goals and ultimately to strategic policies. During the development of new weapons, the linkage is less clearly defined. Future weapons are designed to exacting requirements in order to provide overwhelming capabilities that if properly employed, support a more general or overarching set of defense goals and strategies. The goals and strategies that will guide the development of U.S. forces and capabilities are clearly articulated in the DoD 2001 QDR report.[21]

The U.S. defense strategy recognizes the effect of international globalization and its subsidiary linkages between economic prosperity, freedom and peace. The 2001 QDR defines a defense strategy to defend the nation and to help secure a viable international peace. The new defense strategy supports four specific policy goals.[22]

- **Assuring allies and friends** that the U.S. remains as a reliable security partner who honors its obligations and is willing to use force to defend itself, allies and friends. The presence of military forces, either permanent or temporarily for exercises, is one of the best ways to demonstrate U.S. commitment and promote the development of cooperative security.
- **Dissuading future military competition** through continued pursuit of military research, development, test and technology demonstration programs. The U.S. possesses an internationally recognized and unsurpassed capacity to build a viable defense. Other states and non-state actors cannot compete and will look elsewhere for an advantage.
- **Deterring threats and coercion against US interests** through task organizing a diverse range of forces and capabilities into an appropriate military response that can be successful regardless of the situation, location or constraints involved.
- **If deterrence fails, decisively defeat any adversary** using predominate U.S. military forces and capabilities, either unilaterally or preferably in a coalition effort, against a nation state or non-state actor.

In order to achieve these four goals, the 2001 QDR defines seven strategic tenets that form the framework for U.S. defense policy.[23]

- **Managing Risk** in a volatile, uncertain, changing and ambiguous environment between current defense needs and future capability requirements. A balance or acceptable level of risk must exist to keep a preeminent military power both now and in the future. Tough and prudent decisions will come from their competition for a finite amount of resources.
- **A Capabilities-Based Approach** that focuses on having a defense against how the threat will fight vice how might they fight, who they may be or where the fight may occur. Threat assessments and their application in determining the critical U.S. force capabilities is the key to success.
- **Defending the U.S. and Projecting U.S. Military Power** requires agile capabilities that can be employed wherever needed to deter or defeat the enemy.
- **Strengthening Alliances and Partnerships** through U.S. forces and capabilities that can train, operate or be forward-based with allies and friends.

- **Maintaining Favorable Regional Balances** through temporary or permanent presence of key U.S. forces and capabilities in critical geographic areas that makes the cost of hostilities prohibitive to any adversary.
- **Developing a Broad Portfolio of Military Capabilities** leverages U.S. dominance in key functional areas or technologies to provide critical skills whenever or wherever needed. These capabilities could be task organized into an appropriate military response that can be successful regardless of the situation, location or constraints involved.
- **Transforming Defense** to develop and deploy the requisite future capabilities without sacrificing current military predominance. The transition from legacy to objective forces and capabilities requires a balanced approach to modernization, recapitalization and future weapons development.

By themselves, the DoD defense policy goals are a set of military ends in search of a ways to implement them. These goals form the foundation for a new strategic framework designed to ensure that the U.S. military remains ready to fight and win the Nation's wars whether in defense of the homeland, allies or friends. These seven mutually supporting tenets are the ways or "essence of U.S. strategy"[24] and must be thoroughly understood and applied in order to preserve U.S. military superiority. Hence, the U.S. defense policy goals and strategic tenets form a collective yardstick to measure or assess any future military procurement program, including the MDA's BMD efforts. A feasible, acceptable and suitable BMD effort should favorably support the U.S. defense goals and strategic framework. Otherwise, a limited set of resources are wasted, incorrect forces are fielded and other needed capabilities will go undeveloped. Tough and prudent decisions are required to avoid this unacceptable risk and to field a layered BMD architecture and force structure capable of deterring adversaries or defending U.S. forces, allies and friends.

THE EVOLVING THREAT AND WHAT IT MEANS

To fulfill the U.S. defense policy and strategy, any BMD system must successfully counter the capabilities of our threat. These threat capabilities are defined, assessed and reported by the Intelligence Community in a published document called a National Intelligence Estimate (NIE). The executive and legislative branches use the NIE to assess defense strategies, programs and resources as well as to realign them if necessary in order to reduce or manage risk. This influential document also impacts the development of weapon systems. It takes on a critical level of importance in defining the best way in which a layered BMD architecture of integrated systems is developed. Today's threat assessment has evolved from one of the initial ballistic missile threat estimates completed in 1995.

The 1995 NIE established the "baseline" BMD threat assessment during an interesting period of world history. It coincided with the end of the cold war, grave concerns over the

subsequent disintegration of the U.S.S.R. and other growing trends in both weapon and technology proliferation. It closely followed the lessons learned from the Persian Gulf War, principally the underestimation of and difficulty in defeating Tactical Ballistic Missiles (TBMs). The estimate also was influenced by the introduction of a series of Congressional legislative acts calling for tactical and national missile defense capabilities as soon as possible. It was a time of grave perceptions, much like the cold war missile gap, that the U.S. was vitally threatened. However, the 1995 NIE failed to reinforce this general perception. Its overarching conclusion was that "no country, other than the major declared nuclear powers [Russia and China], will develop or otherwise acquire a ballistic missile in the next 15 years that could threaten the contiguous 48 states and Canada".[25] The NIE defined other trends that formed the basis for debate and critique in subsequent intelligence reports. A summarized list of specific finding and trends are:[26]

- Although technically possible, an unauthorized launch of a Russian ICBM is a remote possibility.
- Among Third World countries hostile to the United States, North Korea has the most advanced ballistic missile program. One of its missiles in development, the Taepo Dong 2, is assessed to have a range of 4,000 to 6,000 kilometers. A 6,000-kilometer range would be sufficient to strike portions of Alaska and the far western portion of the Hawaiian Island chain.
- North Korea is unlikely to obtain the technological capability to develop a longer range operational ICBM. North Korea would have to overcome significant hurdles to complete such a program, particularly given the political and economic uncertainties and technological challenges it faces. For such an ICBM, North Korea would have to develop new propulsion and improved guidance and control systems and conduct a flight test program. We have no evidence that Pyongyang has begun or intends to begin such a program, and we think we would detect propulsion system development.
- Ballistic missile programs of other countries [North Korea, Iran, Iraq, Pakistan, India] are focused on regional security concerns and are not expected to evolve into threats to North America before 2010. The principle constraints to ICBM development are economic resources, technology, supporting infrastructure and for Iraq, international sanctions.
- We are likely to detect any indigenous long-range ballistic missile program many years before deployment. Developmental flight-testing would provide a minimum of five years warning before deployment and propulsion related developmental efforts providing from two to ten years before first flight test or seven to fifteen years before deployment.
- Foreign assistance is a wild card that can sometimes permit a country to solve difficult developmental problems relatively quickly. Such external assists can hinder our ability to predict how soon a system will become operational.
- Any country with a capability to produce space boosters could almost certainly use the same facilities and personnel to produce most ICBM components. However, a development program for a space launch vehicle (SLV) by a potentially hostile state with nuclear ambitions would be a key indicator of a potential ICBM program.
- We expect countries that currently have ICBMs will not sell them. Each of the countries either is a MTCR member or has agreed to abide by its terms and recognizes that

transfer of an intercontinental range missile would show blatant disregard for the regime. Also, countries probably would be concerned that any missiles sold might some day be turned against them.

- We do not believe any country with space launch vehicles will sell them. Furthermore, if a country were to purchase an SLV, converting it to an ICBM would involve technological obstacles roughly as challenging as those involved in an indigenous ICBM program.
- Launching ballistic missiles from surface vessels or aircraft is so technically challenging as to be a highly unlikely approach.

The estimate's unexpected conclusion and alleged use of leaked details with the specific intent of influencing the on-going Congressional debates over a national BMD system created a political uproar that leveled criticism at the NIE process, the Intelligence Community (IC) and raised questions about the true intent of the report.[27] Specific criticism focused on the perceived underestimation of accidental launch as Russian control of strategic forces deteriorated, the acceleration of developmental timelines from both proliferation and foreign assistance, the assurance of detecting long-range missile deployments and the exclusion of Hawaii and Alaska from the U.S. area of concern. To address their concerns, Congress tasked the Director of Central Intelligence to conduct an independent review of the underlying assumptions and conclusions of the 1995 NIE. Commonly known as the Gates Panel, its December 1996 report strongly supported the 1995 NIE conclusion even after taking into earnest consideration the potential adverse impact of the wholesale acquisition of missile technology, hardware and foreign assistance.[28] Simply put, the contested conclusion was found to be necessary, but insufficiently supported by both the facts and analysis contained in the published report. Within the IC, the 1995 NIE was an embarrassing and analytically incomplete product that resulted from committee attrition, a rapidly approaching suspense and an incomplete term of reference.[29] The Gates Panel also found the allegations of political motives to be unsubstantiated and "challenged as irresponsible those who questioned such based on their disagreement of all or some of the findings".[30] Confirming a controversial conclusion and admonishing members of Congress did very little to amend any ill feelings. With an officially benign threat, Congress was left with a dilemma as they attempted to execute their legislative (budgetary and oversight) responsibilities as well as debate the upcoming 1999 decision for the deployment of a limited national BMD system.

As 1999 grew closer, Congress established in Public Law 104-201, the National Defense Authorization Act for Fiscal Year (FY) 1997, a commission to assess the ballistic missile threat to the U.S. To achieve a more comprehensive and non-controversial assessment, Congress created a broad charter to "assess the nature and magnitude of the existing and emerging

ballistic missile threat"[31] as well as nominated a diverse committee with defense, industry, technology, policy and foreign relations experiences. This highly qualified and respected committee included now, Secretary of Defense Rumsfeld for which it was subsequently named and Deputy Secretary of Defense Wolfowitz. The Rumsfeld Committee of nine former senior policymakers from outside the IC understood their broad charter for both what it said and did not say. Their unique constituency and charter allowed them to diverge from the more traditional NIE analytical approach by[32]

- using their perspectives as former senior policy makers from outside the IC
- relying on decades of their personal experiences and a variety of views as users of the IC's products
- taking into account not only the hard data available, but also the often significant gaps in that data and by
- drawing on experts from outside the IC and on studies sponsored by the Commission.

Consequently, the Commission used an interpretative technique to explore emerging threats and extrapolated possible and most dangerous vice most likely outcomes from known hard data. They also examined the ballistic missile threat to all fifty vice the forty-eight contiguous states and included unique or asymmetrical threats posed by ballistic missiles deployed on the territory of a potentially hostile state, deployed by a potentially hostile nation on the territory of another in order to reduce the range required to strike the U.S. and launched from a surface platform or from an aircraft off the U.S. coastline.[33] In other words, this committee used a "thinking rational man" approach to what ballistic missile threats that the U.S. may face. They also used a strict interpretation of "threat to the U.S." and precluded detailed consideration of the threat to forward deployed forces, allies and friends. In light of today's defense policy and strategy, such a narrow interpretation would be insufficient and unacceptable.

The Rumsfeld Committee astutely used what the charter did not direct. The absence of any requirement in their charter to address matters of policy allowed the Commission to avoid the political controversy that hindered the 1995 NIE. To further mitigate potential debates, the Commission specifically included a qualifying statement in their final report that:

> Responses to the threat as assessed by the Commission are matters of considerable public interest. Debate and agreement on the appropriate responses to the ballistic missile threat are needed. The commission hopes that the following assessment will be helpful in that regard.[34]

Within this framework, the nine distinguished commissioners were unanimous in concluding that:[35]

- Concerted efforts by a number of overtly or potentially hostile nations to acquire ballistic missiles with biological or nuclear payloads pose a growing threat to the United States, its deployed forces and its friends and allies. These newer, developing threats in North Korea, Iran, and Iraq are in addition to those still posed by the existing ballistic missile arsenals of Russia and China, nations with which we are not now in conflict but which remain in uncertain transitions. The newer ballistic missile-equipped nations' capabilities will not match those of U.S. systems for accuracy or reliability. However, they would be able to inflict major destruction on the U.S. within about five years of a decision to acquire such a capability (10 years in the case of Iraq). During several of those years, the U.S. might not be aware that such a decision had been made.
- The threat to the U.S. posed by these emerging capabilities is broader, more mature, and evolving more rapidly than has been reported in estimates and reports by the IC.
- The Intelligence Community's ability to provide timely and accurate estimates of ballistic missile threats to the U.S. is eroding. This erosion has roots both within and beyond the intelligence process itself. The Community's capabilities in this area need to be strengthened in terms of both resources and methodology.
- The warning times the U.S. can expect of new, threatening ballistic missile deployments are being reduced. Under some plausible scenarios-including re-basing or transfer of operational missiles, sea- and air-launch options, shortened development programs that might include testing in a third country, or some combination of these-the U.S. might well have little or no warning before operational deployment. Therefore, we unanimously recommend that U.S. analyses, practices and policies that depend on expectations of extended warning of deployment be reviewed and, as appropriate, revised to reflect the reality of an environment in which there may be little or no warning.

Given these latitudes and approach, it is not very surprising that their conclusion was a threat assessment that radically differed from previous intelligence estimates. In fact, the Rumsfeld Commission justified the divergence by declaring their approach as being a “more comprehensive methodology in assessing ballistic missile development and deployment programs” and one that accounts for “three crucial factors now shaping new ballistic missile threats to the U.S.”[36]

- Newer ballistic missile and WMD development programs no longer follow the patterns initially set by the U.S. and the Soviet Union. These programs require neither high standards of missile accuracy, reliability and safety nor large numbers of missiles and therefore can move ahead more rapidly.
- A nation that wants to develop ballistic missiles and weapons of mass destruction can now obtain extensive technical assistance from outside sources. Foreign assistance is not a wild card. It is a fact.
- Nations are increasingly able to conceal important elements of their ballistic missile and associated WMD programs and are highly motivated to do so.

The Rumsfeld Commission portrays a more troublesome and threatening environment that more closely aligns with the prevailing Congressional perspective. Their 15 July 1998

report based on an “expanded methodology” of exploring the possible or worst case vice the most likely scenarios refutes many of the trends reported in the 1995 NIE. Russia and China are still viable threats and are being joined by many Third World nations who are gaining ballistic missile capabilities of regional and strategic strike ranges at alarmingly fast rates. These rogue nations seek the strategic deterrence of a ballistic missile threat and will overcome economic, technological, infrastructure and other constraints in order to possess them. The proliferation of ballistic missiles, either as organic systems or parts thereof, is occurring and may well go undetected. Ultimately, this proliferation will continue to destabilize the affected regions. In short, fifteen years was cut to five and any nation that wanted ballistic missile weapons was capable of obtaining them. However, a point of agreement does exist. Both reports identify North Korea as the most threatening Third World or rogue nation and worthy of close scrutiny.

Whether the Rumsfeld Commission was a blessing or a hindrance to BMD is still an openly debated topic. However, its significance is not. Congress finally got a threat estimate that could support their agenda, actions and desire to build a strong BMD. The report temporarily restored a balance of ends, ways and means for U.S. BMD efforts. It also broke the mold for ballistic missile threat assessments by legitimizing the objective analysis of asymmetry, proliferation, any possible enemy course of action, the political motivation or decision of a rogue nation and the ability to detect program developments. After the unforeseen 1998 launch of a North Korean Taepo Dong 1 missile, the Rumsfeld Commission’s analytical framework became the accepted and politically safe methodology for threat assessments. Its greatest legacy and impact was freeing the IC to think more outside of the box, especially when projecting the emerging trends and their significance.

Using the expanded methodology, the 1999 NIE updated the 1995 assessment. The IC produced a necessary and sufficient product that redeemed their professional reputation and would not become political fodder. Essentially, its conclusion combines the 1995 NIE and Rumsfeld Commission results into a single projection that addresses former cold war adversaries, rogue nations and the extent of their ballistic missile threat. The 1999 NIE concludes that:

> During the next 15 years the United States most likely will face ICBM threats from Russia, China, and North Korea, probably from Iran, and possibly from Iraq. The Russian threat, although significantly reduced, will continue to be the most robust and lethal, considerably more so than that posed by China, and orders of magnitude more than that potentially posed by other nations, whose missiles are likely to be fewer in number— probably a few to tens, constrained to smaller payloads, and less reliable and accurate than their Russian and Chinese counterparts.[37]

Not surprisingly, this NIE also reinforces or expands many of the trends previously addressed by the Rumsfeld Commission.[38]

- By 2015, Russia will maintain as many nuclear weapons on ballistic missiles as its economy will allow but well short of START I or II limitations. An unauthorized or accidental launch is highly unlikely so long as current technical and procedural safeguards are in place.
- By 2015, China is likely to have tens of missiles capable of targeting the United States, including a few tens of more survivable, land- and sea-based mobile missiles with smaller nuclear warheads—in part influenced by US technology gained through espionage. China tested its first mobile ICBM in August 1999. An unauthorized launch is highly unlikely.
- North Korea, Iran, and Iraq view their ICBMs more as strategic weapons of deterrence and coercive diplomacy than as weapons of war.
- North Korea could convert its Taepo Dong 1 SLV into an ICBM that could deliver a light payload to the United States, albeit with inaccuracies that would make hitting large urban targets improbable. North Korea is more likely to weaponize the larger Taepo Dong 2 as an ICBM that could deliver a several-hundred kilogram payload to the United States. Most analysts believe it could be tested at any time, probably initially as an SLV, unless it is delayed for political reasons.
- Iran and Iraq could test an ICBM that could deliver a several-hundred kilogram payload to many parts of the United States in the last half of the next decade depending on the level of foreign assistance from Russian or North Korea, respectively.
- Foreign assistance continues to have demonstrable effects on missile advances around the world, particularly from Russia and North Korea. Moreover, some countries that have traditionally been recipients of foreign missile technology are now sharing more amongst themselves and are pursuing cooperative missile ventures.
- Sales of ICBMs or SLVs, which have inherent ICBM capabilities and could be converted relatively quickly with little or no warning, could increase the number of countries able to threaten the U.S.
- The proliferation of medium-range ballistic missiles (MRBMs)—driven primarily by North Korean Taepo Dong sales—has created an immediate, serious, and growing threat to US forces, interests, and allies, and has significantly altered the strategic balances in the Middle East and Asia. These countries view their regional concerns as one of the primary factors in tailoring their programs. They see their short- and medium-range missiles not only as deterrents but also as force-multiplying weapons of war, primarily with conventional weapons, but with options for delivering biological, chemical, and eventually nuclear weapons.
- We assess that countries developing missiles also will respond to US theater and national missile defenses by deploying larger forces, penetration aids, and countermeasures. Russia and China each have developed numerous countermeasures and probably will sell some related technologies.
- Several other means to deliver weapons of mass destruction to the U.S. have probably been devised, some more reliable than ICBMs that have not completed rigorous testing programs.

The 1999 NIE documents the continued decrease in the ICBM threat as Russia continues to demobilize, China continues a modest development program and the rogue nations

remain several years away from an initial capability. If launched, any ICBM threat is limited and in the order of magnitude of ten or less missiles. Rogue nations do not enter the ICBM threat arena until the later half of the next decade. Once a member of the ICBM club, these nations will only constitute a very limited threat with missiles as few as one and with a small payload capacity. Proliferation, dual use development and foreign assistance continue to be a significant problem and the major influencing factors for developmental timelines. In addition to refining previous trends or observations, the 1999 NIE brings forth three critical issues. First, the immediate and prevailing rogue nation threat is from short to medium range vice intercontinental ballistic missiles. Second, countermeasures will be employed, whether indigenously developed or obtained through foreign military sales, to offset U.S. BMD weapon capabilities. Third, is the introduction of a possible non-missile delivery means for WMD. The first two issues have significant relevancy to the development of a layered BMD architecture, i.e. prioritization of terminal, boost and radar discrimination capabilities. The latter unfortunately lies outside of the BMD environment and illustrates the utility in using all elements of power to totally defeat a threat.

The most recent NIE, completed on 9 January 2002, is the second iteration or application of the expanded methodology. It results from a deliberate effort to synchronize the evolving threat and assessment process in order to produce the most accurate estimate possible. The 2002 NIE concluded that:

> Most IC agencies project that before 2015 the United States most likely will face ICBM threats from North Korea and Iran, and possibly from Iraq—barring significant changes in their political orientations—in addition to the longstanding missile forces of Russia and China. One agency assesses that the United States is unlikely to face an ICBM threat from Iran before 2015.[39]

The consistency with the previous NIE estimate increases the validity of its conclusion. Although not a radical change from the previous NIE, it does reflect two significant changes in orientation. First, the principle future ICBM threat is a rogue nation vice the old cold war adversaries whose energy is focused on economic globalization and stability. Second, the unprecedented inclusion of a dissenting option on Iraq indicates that the IC diligently applied the process and presented all relevant information. In addition to reinforcing the 1999 NIE, this estimate made the following findings:[40]

- China continues its ICBM modernization effort and by 2015 could have 75 – 100 warheads deployed against the U.S. including both road mobile and submarine launched variants.
- Short- and medium-range ballistic missiles are a very significant threat overseas to US interests, military forces, and allies. This threat will only intensify as missile range,

reliability and accuracy increase and Russian, Chinese, and North Korean technology proliferates.

- North Korea's multiple-stage Taepo Dong 2, which is capable of reaching parts of the United States with a nuclear weapon-sized (several hundred kg) payload, may be ready for flight-testing should their voluntary 2003 moratorium be lifted.
- Iran has in development the 1,300 KM range Shahab 3 MRBM that could be launched in a conflict.
- Several countries could develop a mechanism to launch SRBMs, MRBMs, or land-attack cruise missiles from forward-based ships or other platforms; a few are likely to do so—more likely for cruise missiles—before 2015.
- Non-missile means for delivering weapons of mass destruction do not provide the same prestige, deterrence, and coercive diplomacy as ICBMs; but they are less expensive, more reliable and accurate, more effective for disseminating biological warfare agents, can be used without attribution, and would avoid missile defenses.
- Foreign non-state actors—including terrorist, insurgent, or extremist groups that have threatened or have the ability to attack the United States or its interests—have expressed an interest in chemical, biological, radiological, or nuclear (CBRN) materials.

The 2002 NIE adds the final degree of fidelity on the ballistic missile threat. Although the ICBM threat continues to diminish as existing strategic stocks are retired, China could reverse that trend and field a 3 to 5 fold increase once a decision is made to do so. Short to medium range ballistic missiles are the prevailing and growing threat with both North Korea and Iran on the threshold of achieving/obtaining the next evolutionary step. The SRBM and MRBM threat could become a weapon with operational or strategic importance if launched from an off-shore platform. Most disturbing is the increased asymmetric threat by delivering a WMD in a manner other than a ballistic missile.

So, what does seven years of assessing an evolving ballistic missile threat tell the U.S. about the enemy capabilities that must be defeated? Russia continues to demobilize its strategic missile forces as the demands of their struggling economy, arms control treaties and aging nuclear weapon systems are fully realized. Unlike Russia, China is still a threat to be reckoned with. Once resources are committed or if provoked, China could deploy a modern ICBM threat, both in quantity and with countermeasures, that surpasses the defense capability of a limited national BMD system. Fortunately, an accidental launch from either former cold war adversary remains a highly unlikely event. The near-term or immediate threat is a rogue nation that uses short to medium range ballistic missiles to regionally threaten forward deployed U.S. bases, forces, allies and friends. The SRBM and MRBM threat is rapidly growing in range, payload size and accuracy as well as proliferating to almost any nation or actor who desires them. If deployed on a ship or other off-shore platform, these tactical weapons of terror achieve an operational or strategic status. Alternative launch methods would be extremely difficult to detect until after the missile is already airborne. Finally, asymmetric warfare is being applied to

WMD. Ballistic missiles may offer a rogue nation or actor a way of obtaining regional deterrence or an instrument of coercive diplomacy. However, the difficulty to transform a typical tactical missile into a viable WMD delivery means is almost insurmountable for these rogue nations or actors. So, why invest in ballistic missiles or risk defeat by a U.S. BMD weapon if you do not have to? As stated by Central Intelligence Agency (CIA) Analyst Robert Walpole in his Congressional testimony on 11 March 2002, the U.S. is more likely to be attacked with WMD using non-missile delivery means, most likely from terrorists, primarily because non-missile delivery means are less expensive, easier to acquire, more reliable and accurate.[41] These are the missile threat capabilities that MDA must design its BMD architecture and systems to deter or defeat if necessary. To defeat the full spectrum of threat capabilities, BMD is but one element of a concerted effort. Truly, this is an exciting and challenging time for U.S. BMD efforts.

WHY THE 1996 NATIONAL BMD CONCEPT MUST CHANGE

In the assessment of how to best implement a U.S. BMD policy, a logical consideration would be to simply continue the development of a limited national BMD system with a short notice or emergency deployment option that was started in the mid-1990s. A visionary system, it integrated powerful ground-based radars, space-based satellites, ground-based interceptors with an exo-atmospheric kill vehicle (EKV), and a highly automated battle management control architecture. Why not capitalize on the last six years of investment and effort to defend the U.S. against an ICBM attack?

The 1996 national BMD concept was plagued by the need to develop and integrate high risk, costly and politically constrained technologies. Despite numerous attempts to restructure or phase the program, the technical uncertainties for the ground-based radar systems and the EKV in discriminating basic warhead countermeasures became the principle limiting factor and cost driver.[42] The January 2002 Congressional Budget Office report estimated that an initial national BMD capability will cost between $23 to $25 billion dollars.[43] To mitigate risk and improve reliability, the concept became a tri-phased program designed to add more ground-based radars and interceptors at an increased cost of $51 to $64 billion dollars.[44] Basically, the program became an iterative or modular approach to purchase as much reliability as the nation could or would afford. Like its predecessor the Safeguard ABM system, this ground-based limited BMD concept was on the same path to technological obsolescence, unaffordable cost and dubious operational effectiveness.

This concept was also overcome by a change in U.S. defense goals and strategy. Although an argument could be made for its development effort in dissuading future military competition, the 1996 national BMD program, oriented on the defense of the continental U.S., did little to assure our allies, promote cooperative security, respond to regional threats or defeat them if deterrence failed. As a limited and non-deployable point defense, this BMD program had neither presence capability nor could contribute to a military deterrence or defense option. In fact, the current administration's continued diplomatic effort to address the international concerns of Russia, China and other allies is more indicative of a provocative vice assuring effect. A similar argument can be made for its non-contributory effect on the defense strategy tenets. For example, the 2001 QDR stresses risk management to balance resource competition between current and future military capabilities. The budget is a zero sum process. As additional funds are invested in a BMD concept, more bill-payers must be found. This forces pentagon analysts to weigh a series of cuts to other major weapons programs in order to pay the bills for both defense modernization and BMD.[45] They will find that no easy answers exist. The Army's Comanche, Stryker and Future Combat System are potential candidates who will suffer program cuts, delays or other changes to free capital for investment in BMD.[46] It appears that among future military capabilities, some are more equal than others. What other impacts on modernization, recapitalization and transformation will occur before the BMD bill is paid? Another example of failure to support the U.S. strategy is the capability-based defense tenet oriented on how an enemy will fight. The January 2002 NIE predicts that the most likely attacks on the U.S. and U.S. forces or our allies will be from non-missile delivery means and short to medium range ballistic missiles, respectively. A national BMD system that cannot defeat either of these threats only legitimizes any questioning of the effort and expenditure to build it. The close scrutiny of the BMD programs seen during the FY03 budget deliberations is a manifestation of this dilemma and the current Congressional perception of a resource to defense capability mismatch.

Simply put, the 1996 national BMD concept was a "bridge too far" for immature and cost prohibitive technologies. At best, a marginal capability marred by an unacceptable reliability rate and susceptibility to rudimentary countermeasures would be fielded. It would be a defense largely in name only and provide a false sense of security to a nation that demands much more from its professional military. The termination of this concept is a logical extension of two presidential decisions. The first was former President Clinton's September 2000 decision to defer deployment and to continue only with additional development and testing. The second was President Bush's decision to remove political constraints on technology development by

withdrawing from the ABM Treaty. Although many things can be leveraged from the ground-based national BMD concept, it serves as a last known point of departure from which better alternatives or options can be derived.

BMD OPTIONS

The strong U.S. commitment makes revocation or drastic alteration of the BMD policy virtually impossible. Therefore, it is not a question of doing or not doing it. The question is how to best accomplish it. So, what alternative and viable options exist for implementing this policy?

Two prevailing themes exist. The first proposal, championed by Senator Reed who is the chairman of the subcommittee that oversees MDA funding, calls for the continued full-scale development, but not the immediate deployment of a national BMD system.[47] Cost savings could be reallocated to the accelerated deployment and continued future development of proven theater BMD systems, e.g. PAC-3, which can defeat the most likely threat of a short to medium range missile during its final or terminal descent. It also employs the PAC-3 kinetic "hit to kill" missile interceptor that successfully incinerates WMD warheads. The FYDP cost to complete the PAC-3 fielding of all 50 firing batteries and their 2,200 missiles is $3.78 billion dollars.[48] To put the cost into better perspective, the 2002 research and development funding of $3.2 billion dollars for a national BMD could almost pay for the PAC-3 procurement and, in conjunction with existing PAC-3 funds, provide a fiscal wedge for investment in other successful developmental TMD programs like THAAD, NTW or the international MEADS.

The second proposal, championed by the Defense Science Board in a soon to be released study and endorsed by the Washington D.C. Heritage Group, calls for the limited development of a national BMD system focused on truly promising and less risky technology with cost savings reallocated to the development and deployment of a sea-based BMD.[49] This concept modernizes the existing fleet of 61 AEGIS cruisers and destroyers at a projected cost of $100 to $200 million dollars per ship.[50] A sea-based platform offers several unique advantages such as responsive deployment and sustained operations in international waters where basing rights or other means of denied access hinder the military action. The resulting BMD capability can defeat the short to medium range threat with the innate capability to kill even longer range threats by forward positioning a ship in a critical region of the world or by using a new (faster) missile interceptor. The limiting factor for evolving this BMD capability into a full spectrum defense, i.e. boost, midcourse and terminal engagement opportunities, is a better "bullet" to shoot. One possible candidate, the Navy Standard Missile 3 (SM3) has already completed two very successful intercept tests and demonstrated an evolutionary path for boost phase

intercepts. According to LTG Kadish, the MDA director, if the interceptor continues to enjoy technical success then the initial deployment of a SM3 on an AEGIS ship could take place between 2004 and 2006.[51]

Both options remove any self-imposed pressure to do something and a possible false sense of security from deploying a limited ground-based national BMD system. It gives program managers greater freedom to time fiscal expenditures with mature and proven technology developments including the exploration of technologies that were previously prohibited by treaty. With greater freedom, cost efficiencies will increase while decreasing technology risks. Meanwhile, other BMD capabilities are fielded that can defeat the most likely threats as well as having a capability against a possible longer range missile threat from a rogue nation or actor. By not immediately deploying a national BMD system, both options comply with the intent or spirit of the ABM Treaty and support diplomatic actions to alleviate international concerns and any potential adverse reactions. These options differ slightly in how they continue development of a national BMD capability that could be used if or when the threat arose. However, they differ more in how to defeat the immediate threat and the associated cost to do so.

A better option would capitalize on the mutual strengths of both proposals while mitigating the risks associated with their differences. Recognizing that not all 61 AEGIS ships would require modernization in order to field a formidable capability, cost savings could be applied to develop and deploy both the ground- and sea-based BMD capabilities. Together, these weapon systems provide an effective and mutually supportive BMD capability against the prevailing threat that is also flexible enough to defend critical portions of the U.S., its deployed forces or its allies. It gives the President the option to deploy modified AEGIS ships to areas of potential conflict, station themselves according to intelligence estimates for boost phase engagements, and if deterrence fails, defeat the threat early in its ballistic flight while still located over enemy territory. Early engagement localize any hazardous or WMD effects and may contain them to the threatening nation. If the missile intercept should fail, radar information is still available to discern between warheads and decoys, to enable other BMDS to successfully engage the threat and to confirm the origin of launch for other potential military operations. If access is denied or required, the ship remains on station to provide BMD until military forces are ashore. PAC-3 can now be employed to defend air and sea points of demarkation or can move forward to protect the maneuver forces.

At first glance, this composite option makes intuitive sense as a more balanced allocation of fiscal resources and efforts to field a BMD capability. However, the truest measure is the collective yardstick of adherence to the U.S. defense policy goals and strategic tenets. A

feasible, acceptable and suitable BMD effort should favorably support the U.S. defense goals and strategic framework. How well does this option support these goals and framework?

This composite BMD force structure provides the U.S. with the forward presence, power projection and a wider range of military BMD capabilities needed to assure our allies and friends, to deter threats and coercion, and to defeat the enemy if deterrence fails. Both Patriot and AEGIS ships are routinely used as flexible deterrent options, in training exercises with allies, and are forward deployed in critical regions of the world. For example, Patriot deployed to Southwest Asia in support of the Persian Gulf War in 1990 and has maintained a constant presence ever since. Additionally, these platforms are shared with key allies and could be upgraded to provide some critical nations with an organic and more robust BMD capability. In addition to a self-defense capability, upgraded BMDS would provide our allies with a capacity to contribute to or even lead coalition missile defense efforts. Again, Patriot offers another example. Its deployment and employment with Israeli Patriot systems helped defend an entire nation and is often attributed as a principle factor in both keeping Israel out of the Gulf War and holding the coalition together. A “super NTW” equipped AEGIS cruiser positioned off the coast of an ally or friend could achieve the same effect. In short, a combined ground- and sea-based BMDS gives the U.S. a highly flexible capability to defend the homeland and to employ to directly strengthen our cooperative security alliances or to maintain desirable balances of power in critical regions.

This composite option also mitigates risk through a more balanced allocation of resources to achieve a current BMD against the immediate threat capability while simultaneously developing the defense needed to defeat the future threat and deterring potential military competition. By addressing the entire range of threat capacities, this option truly achieves a capabilities-based and balanced approach to current defense needs and future capability requirements. Balance gives the Army flexibility and investment capital in fiscal and other resources to support the concurrent efforts to modernize, recapitialize and transform. It is a win-win option for ensuring present and future military predominance.

Overall, the composite option or reasonable facsimile is a feasible, acceptable, and suitable BMD effort that closely supports the U.S. defense goals and strategic framework. It fields a layered architecture and responsive force structure capable of deterring adversaries or defending U.S. forces, allies and friends. It has the desired flexibility to keep pace with an evolving threat and to integrate other fielded BMDS into a comprehensive system of systems defense. Finally, it continues the development of a national BMD capability to dissuade future military competition and potentially use if or when the threat arises.

CONCLUSION

It is an exciting and challenging time for BMD. After the 9/11 terrorist attacks and the withdrawal from an internationally renowned treaty, the MDA has been charged with the development of a layered and integrated architecture to defeat the spectrum of ballistic missile threats. This agency has received unprecedented support and funding to accomplish their new charter. However, their efforts must complement a coherent U.S. defense strategy and cannot be funded simply because the capacity or desire exists to do so.[52] A feasible, acceptable and suitable BMD effort should favorably support the U.S. defense goals and strategic framework described in the 2001 QDR report. Otherwise, a limited set of resources are wasted, incorrect forces are fielded and other needed capabilities will go undeveloped. This is the dilemma faced by the continued pursuit of a limited, costly and potentially obsolete ground-based BMDS. Tough and prudent decisions are required to avoid this unacceptable risk and to field a layered BMD architecture and force structure capable of deterring adversaries or defending U.S. forces, allies and friends.

Fortunately, a viable alternative does exist. It is a composite option that fields a combined ground- and sea-based BMD architecture while continuing to develop a limited ground-based national system. The fielding of Army PAC-3 systems and modified Navy AEGIS ships provides a flexible, responsive and capable BMDS to immediately counter the prevailing threat and to reassure our allies with a deployable or forward positioned military capability. This option offers the easy proliferation of the latest BMD capability to our allies and maintains growth potential against the evolving ballistic missile threat. The continued but limited development of a national BMD capability will dissuade future military competition while preserving the potential to use if or when the threat arises. A limited program development gives acquisition managers greater freedom to time fiscal expenditures with mature and proven technology developments including the exploration of technologies that were previously prohibited by the ABM treaty. Most importantly, this composite option provides the U.S. with a strong position to pursue BMD technologies and field immediately needed capabilities while working to reassure a concerned international community and continuing to counter proliferation of the ballistic missile threat. This alternative adheres to the 2001 QDR defense strategy, fulfills the new MDA charter and achieves the best BMD capability as quickly and affordably as possible. This composite approach is worthy of serious consideration and additional analysis by the MDA and the Joint Staff.

WORD COUNT = 11483

ENDNOTES

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